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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,390	07/11/2003	Kevin Lee Wasson	050377-0301666	2195
909 7590 01/24/2007 PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			EXAMINER KRAUSE, JUSTIN MITCHELL	
			ART UNIT	PAPER NUMBER
			3682	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/617,390

Applicant(s)

WASSON ET AL.

Examiner

Justin Krause

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12, 17, 18, 42, 44-49, 59, 60, 62-65, and 69-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 17, 18, 42, 44-49, 59, 62-65 and 69-78 is/are rejected.
- 7) ☒ Claim(s) 60 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

The Restriction Requirement mailed March 21, 2006 is rendered moot in view of applicant's cancellation of claims 36, 37, 51, 52, 67, and 68.

### ***Double Patenting***

Claim 77 and 78 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/483,629. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim a bearing comprising a carriage having one or more bearing pads, a fluid recovery system, a sealing structure having end and side portions and a double lipped seal, the first lip engaging the bearing rail and the second lip discouraging debris from entering the carriage, reservoir structures, and drain grooves. The bearing rail is inherent to the device, since without it, the device would be incapable of functioning.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 44, 45, 12, 42, 62, 71 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Zerbola (US Patent 3,635,532).

Zerbola discloses a hydrostatic bearing comprising:

- a bearing rail (4)

- a bearing carriage (5), including:

- one or more bearing pads (21) provided on surfaces opposite the bearing rail

- a sealing structure (30) having side and end portions

- a fluid return system including a plurality of drain grooves (24) in fluid communication with the one or more bearing pads and being positioned between one or more of the bearing pads and the sealing structure, the plurality of drain grooves surrounding the one or more bearing pads.

Regarding claim 45, one or more reservoirs (26, 27) are in fluid communication with the drain grooves.

Regarding claim 12, the carriage further comprises a fluid inlet port (22) in fluid communication with one or more bearing pads and a fluid outlet port (25) in fluid communication with the plurality of drain grooves.

Regarding claim 42, the side portions of the sealing structure have a substantially upward facing u-shaped cross section.

Regarding claim 62, at least one of the drain grooves extend along the length of the bearing carriage.

Regarding claim 71, the sealing structure surrounds the plurality of drain grooves.

Claims 44, 45, 47, 12, 18, and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Thum (US Patent 3,355,990).

Thum discloses a hydrostatic bearing comprising:

- a bearing rail (2)

- a bearing carriage (1), including:

- one or more bearing pads (6, 6', 6'') provided on surfaces opposite the bearing rail

- a sealing structure (8, 8', 8'') having side and end portions

- a fluid return system including a plurality of drain grooves (9, 9', 9'') in fluid communication with the one or more bearing pads and being positioned between one or more of the bearing pads and the sealing structure, the plurality of drain grooves surrounding the one or more bearing pads.

Regarding claim 45, one or more reservoirs (11, 11', 11'') are in fluid communication with the plurality of drain grooves.

Regarding claim 47, the bearing rail has a rectilinear shape.

Regarding claim 12, the carriage further comprises a fluid inlet port (3) in fluid communication with one or more bearing pads and a fluid outlet port (12) in fluid communication with the plurality of drain grooves.

Regarding claim 18, a machine tool is mounted on one or more hydrostatic bearings.

Regarding claim 59, the carriage further comprises a central portion (the portion with wide cross hatching lines) and removably mounted keeper portions (narrow cross hatching lines) that engage portions of the bearing rail.

Claims 73-76 are rejected under 35 U.S.C. 102(b) as being anticipated by Lyon (US Patent 6,012,845).

Lyon discloses a hydrostatic bearing comprising:

A bearing rail (12),

A bearing carriage, comprising a plurality of self compensating bearing pads (142), each of the pads comprising:

A pocket groove (152) fluidly connected to a compensating groove (140) of another of the plurality of bearing pads (Col 4, lines 1-6),

A compensating groove fluidly connected to a pocket groove of another of the plurality of bearing pads (Col 4, lines 1-6),

A supply groove (145a) proximate to the compensating groove, in fluid communication with a pressurized fluid source

A planar resistive land (the area between and surrounding the pocket groove, the compensating groove and the supply groove) separating the supply groove and the compensating groove, and surrounding the supply groove

Wherein a portion of the planar resistive land is interposed between the compensating groove and the pocket groove and

Wherein the planar resistive land does not include a drain groove between the compensating groove and the pocket groove.

Regarding claim 74, the planar resistive land surrounds the compensating groove.

Regarding claim 75, the planar resistive land surrounds the pocket groove.

Regarding claim 76, the planar resistive land is interposed between the supply groove and the pocket groove and does not include a drain groove between the supply groove and the pocket groove.

Regarding the functional limitations of claims 73-76,

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

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The device of Lyon is capable of performing the intended function and does perform that function.

Claim 77 is rejected under 35 U.S.C. 102(b) as being anticipated by Kane (US 5,971,614).

Kane discloses a hydrostatic bearing comprising:

A bearing rail (23)

A bearing carriage (2)

One or more bearing pads (35a, 34a, 33a, 32a, 31a, 30a, and 29a)

A fluid recovery system comprising

- A sealing structure (95) having end and side portions

- Reservoir structures (93a, 95a) defined by portions of said bearing carriage and sealed by said sealing structure

- Drain grooves (80a, 80b)

Regarding the functional limitations of Claim 77,

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).



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The device of Kane is capable of performing the claimed function.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbola in view of Kane.

Zerbola teaches all of the claimed subject matter as described above, but does not disclose one or more fastening holes on the upper surfaces of the bearing carriage.

Kane teaches one or more holes (17a) on the upper surfaces of the bearing carriage for supporting a load such as a machine table. (Col 11, lines 60-63)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zerbola and incorporate fastening holes as taught by Kane, the motivation would have been supporting a load, such as a machine table on the bearing carriage.

Claims 44, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Gast (US Patent 3,583,744) in view of Thum.

De Gast discloses a hydrostatic bearing comprising

- a rectilinear, T-shaped rail (2)

- a bearing carriage (1)

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- one or more bearing pads (3-8) provided on surfaces opposite the bearing rail

De Gast does not disclose:

- a sealing structure having side and end portions

- a fluid return system including a plurality of drain grooves in fluid

communication with the one or more bearing pads and being positioned between one or more of the bearing pads and the sealing structure, the plurality of drain grooves surrounding the one or more bearing pads.

Thum teaches a hydrostatic bearing having a sealing structure (8, 8', 8'') having side and end portions and a fluid return system including a plurality of drain grooves (9, 9', 9'') in fluid communication with the one or more bearing pads and being positioned between one or more of the bearing pads and the sealing structure, the plurality of drain grooves surrounding the one or more bearing pads, for the purpose of collecting oil and preventing it from flowing beyond the drain grooves (col 2, lines 31-33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify De Gast and incorporate a sealing structure and a plurality of drain grooves as taught by Thum the motivation would have been collecting oil and preventing it from flowing beyond the drain grooves.

Claim 46, 64, 65, and 69-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbola in view of Lyon.

Zerbola discloses all of the claimed subject matter as described above, including inlet ports (22) and outlet ports (25) and reservoirs in an end portion of the bearing carriage. Zerbola does not teach the inlet and outlet ports in the end portions in communication with a hydraulic power unit.

Lyon teaches reservoirs (24, 26, 28, 30) including fluid inlet and outlet ports (40, 44, 46) in communication with a hydraulic power unit, through 20, in an end portion of the bearing carriage for the purpose of circulating fluid through the hydrostatic bearing from a first pad to a second pad diagonally across from the first pad.

Regarding claims 64, 65, and 69, Zerbola does not disclose one or more of the bearing pads including a pocket groove enclosing a first planar area, a second planar area contiguously surrounding the pocket groove and wherein the plurality of drain grooves completely surrounds the pocket groove, and a compensating groove, wherein the second planar area does not include a groove between the compensating groove and the pocket groove.

Lyon teaches one or more of the bearing pads including a pocket groove (152) enclosing a first planar area, a second planar area contiguously surrounding the pocket groove and wherein the plurality of drain grooves completely surrounds the pocket groove, and a compensating groove (140), wherein the second planar area does not include a groove between the compensating groove and the pocket groove for the purpose of desensitizing the effects of a loss of hydrostatic pressure. (col 1, lines 52-54)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zerbola by incorporating bearing pads as taught by Lyon, the motivation would have been to desensitize the effects of a loss of hydrostatic pressure loss.

Regarding the functional limitations of claims 64, 65, and 69,

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

MPEP 2114

The device of Lyon is capable of performing the intended function and does perform that function.

Regarding claim 70, Zerbola does not disclose self compensating bearing pads comprising a pocket groove fluidly connected to a compensating groove of another of the plurality of bearing pads,

A compensating groove fluidly connected to a pocket groove of another of the plurality of bearing pads,

A supply groove proximate to the compensating groove, in fluid communication with a pressurized fluid source

A planar resistive land separating the supply groove and the compensating groove, and surrounding the supply groove

Wherein a portion of the planar resistive land is interposed between the compensating groove and the pocket groove and

Wherein the planar resistive land does not include a drain groove between the compensating groove and the pocket groove.

Lyon teaches self compensating bearing pads comprising a pocket groove (152) fluidly connected to a compensating groove (140) of another of the plurality of bearing pads (Col 4, lines 1-6),

A compensating groove fluidly connected to a pocket groove of another of the plurality of bearing pads (Col 4, lines 1-6),

A supply groove (145a) proximate to the compensating groove, in fluid communication with a pressurized fluid source

A planar resistive land (the area between and surrounding the pocket groove, the compensating groove and the supply groove) separating the supply groove and the compensating groove, and surrounding the supply groove

Wherein a portion of the planar resistive land is interposed between the compensating groove and the pocket groove and

Wherein the planar resistive land does not include a drain groove between the compensating groove and the pocket groove for the purpose of controlling the size of the gap between the carriage and the rail (col 4, lines 8-19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zerbola and incorporate self compensating bearing pads as taught by Lyon, the motivation would have been to control the size of the gap between the bearing carriage and the bearing rail.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbola in view of Lyon.

Zerbola discloses all of the claimed subject matter as described above, but does not disclose the bearing pads to be self-compensating.

Lyon teaches the use of self-compensating bearing pads for the purpose of responding automatically to a change in the bearing gap by changing the flow of fluid to pockets positioned along the bearing races. (col 1, line 27, 29)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zerbola and incorporate self-compensating bearing pads as taught by Lyon, the motivation would have been providing bearing pads that respond automatically to a change in the bearing gap by changing the flow of fluid to pockets positioned along the bearing races

Claims 63 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbola in view of Berger (US Patent 4,753,311).

Zerbola discloses all of the claimed subject matter as described above but does not disclose a double lipped seal.

Berger teaches a hydrostatic bearing device with a double lip seal (5) to provide a seal between a pressurized space and the atmosphere.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a double lip seal as taught by Berger to provide a seal between the pressurized space inside the bearing and the atmosphere.

Regarding claim 72, Zerbola discloses all of the claimed subject matter as described above and the end portions of the sealing structure seal the ends of the carriage, the side portions of the sealing structure extend along the sides of the bearing carriage to seal the sides, the fluid return system further comprises reservoir structures defined by portions of the bearing carriage and sealed by the sealing structure, wherein there drain grooves conduct pressurized fluid from the bearing pads to the reservoir structures, but does not disclose a double lipped seal.

Berger teaches a hydrostatic bearing device with a double lip seal (5) to provide a seal between a pressurized space and the atmosphere.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a double lip seal as taught by Berger to provide a seal between the pressurized space inside the bearing and the atmosphere.

Regarding the functional limitations of Claim 72, functional language in a device claim is given minimal patentable weight.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

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Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kane et al (US Patent 5,971,614) in view of Berger et al (US Patent 4,753,311).

Kane discloses all of the claimed subject matter as described above.

Kane does not disclose a double lip seal on the end portions.

Berger teaches a hydrostatic bearing device with a double lip seal (5) to provide a seal between a pressurized space and the atmosphere.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a double lip seal as taught by Berger to provide a seal between the pressurized space inside the bearing and the atmosphere.



Regarding the functional limitations of Claim 78, functional language in a device claim is given minimal patentable weight.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

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### ***Allowable Subject Matter***

Claim 60 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

Applicant's arguments with respect to claims 12, 17, 18, 42, 44-49, 59, 60, 62-65, and 69-78 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

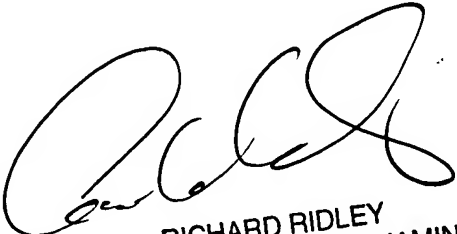
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK

1/19/07



RICHARD RIDLEY  
SUPERVISORY PATENT EXAMINER